ESTABLISHT IN 1861

# AMERICAN BEE JOURNAL

THE OLDEST BEE-PAPER IN AMERICA

42d YEAR. CHICAGO, ILL., JANUARY 2, 1902. No. 1.

## Editorial.

**The Forty-Second Volume** of the American Bee Journal is begun with this issue. Getting old, isn't it? But some things "improve with age," it is said. We trust it may be so in this case. We can not make any great promises as to the future, but we expect not only to do all in our power to maintain the pace already attained, but hope to make even a better record during 1902. With the hearty support of so many sympathetic readers, and with a determination to keep the American Bee Journal in the front rank, we look forward with high hopes to the New Year, and trust that it may bring richest blessings to all, whether readers of these pages or not.

**Expressions of Appreciation** of the American Bee Journal have been so abundant and hearty during the past few weeks, that we may be pardoned for taking a little space to thank most sincerely those who—whether renewing their subscriptions or requesting a discontinuance—have written us so kindly and so graciously.

Many people think that the world at large is often cold and unfeeling, but we are glad to know that "the world of bee-people" is seldom other than appreciative of honest effort and devoted toil. And to receive so many tokens of such enthusiastic esteem for the American Bee Journal is a source of great encouragement to those who plan and work to make its weekly visits a help and a blessing to all who read it.

So we desire to take this opportunity to thank most cordially all who have helped, in whatever way, to bring joy and gladness to this office, and to assure them that the expressions of appreciation, as well as the more substantial things that more often accompanied them, are greatly prized, and will aid in lightening the labors, as well as the hearts, of all whose united effort creates weekly the old American Bee Journal.

**Selection of Drones.**—In Le Rucher Belge are given some words of counsel as to rearing queens, from the noted French queen-rearer, M. Girard-Pabou. If the same pains had been taken to breed only from colonies giving best results that have been taken to breed for looks, there can be little doubt as to the progress that would have been made. Some pay little attention to the production of drones, which, for best results, should be tolerated only in two or three choice colonies. C. P. Dadant says the influence of the male is greater than that of the female. Destroy carefully before their birth all drones in colonies other than the choice ones, and from 10 to 3 o'clock close with excluder-zinc the entrances of all colonies from which we do not want drones to fly to meet the young queens.

**Honey Tooth-Wash** to remove tartar from the teeth: According to Le Miroir, dentists use the following: Muriatic acid, 1 part; water, 1 part; honey, 2 parts.

**Cure of Bee-Dysentery.**—It is well known that a good flight is a cure for dysentery in bees, but generally little is done to oblige bees to fly except to wait till the weather is warm enough. Loyalstone (in the Australian Bee-Keepers' Review) goes at the matter somewhat heroically, as follows:

On a warm day remove all bees from the hive, except the frame the queen is on, to a distance of 50 yards from the hive—then shake the bees off the frames, allowing them to fly back to their hive. Two such treatments, with about one hour's interval between them, will generally cure this disease.

**Wasps and Bees Compared.**—Mr. H. W. Brice has been investigating, and gives some notes in the British Bee Journal. Like the queen-bee, the queen-wasp is impregnated once for life. Unlike the queen-bee, the queens of the wasp (*Vespa vulgaris*) can be, and are, fertilized in confinement. In a state of nature they are fecundated within or in close proximity to the nest. The male wasp can live to fertilize several queens. At the mating season there are more queens than male wasps. While the larva of the bee takes in its food by absorption, the larva of the wasp is fed by the mouth, perhaps through the entire period, certainly after the first three days.

**Changing Brood** from one colony to another is practiced by many, but not always in the same way. Some think it advisable early in the season to take brood from strong colonies and give to the weak. Others think it advisable to take from the weak and give to the strong. Justification for these two practices so diametrically opposed to each other may be found in the different conditions. In a region where the honey season is long, or where a heavy honey-flow comes late in the season, taking away brood from a strong colony will result in a smaller return from that colony, but that loss will be more than made up by the gain from a weaker colony, which, without such help, would have given little or no return. For it must be remembered that a strong colony does not merely yield in direct proportion to its strength, as compared with a weaker colony. That is, a colony of 50,000 bees will store *more* than twice as much as a colony of 25,000 bees.

On the other hand, in a region where there is a single flow that comes early and does not last long, remembering that it is the strong colonies that are profitable, the bee-keeper takes from the weak and gives to the strong, so as to have as many strong colonies as possible.

In either case it should be borne in mind that brood should never be taken from a strong colony till it is very strong; for up to a certain point the stronger the colony the more rapid the building up; and the mistake of many is to take brood from a strong colony until it is so weakened that it can not continue to build up rapidly. Taking brood from a weak colony to give to a strong is another matter; in that case it is understood that the building up of the weak will be much retarded; but the weak would give no returns anyway, and the returns of the strong will be increased.

**Feeding Robber-Bees.**—S. E. Miller relates in the Progressive Bee-Keeper that the robbers got the start of him one day, when, for a time, he left the tent in which he had been extracting, and when he returned he found the tent roaring with bees. He filled the tent so full of smoke that they were glad to get out. He continues:

Still, I knew that after the bees had discovered the inside of my castle they would make extracting more than interesting, unless I could interest them elsewhere. I therefore carried some bodies, containing combs from which I had extracted the honey, outside, took a sprinkler and sprinkled water over the combs in order to keep the bees from becoming crazy, as they would have done had I allowed them to work on the undiluted honey. This worked very well, and I finished up the extracting with very little further bother from the bees. I carried out the empty combs as fast as extracted, and each hive-body full was given a good sprinkling with water.

**For Ants About Hives,** place a vessel (an old oyster can will do) containing a solution of sugar poisoned with arsenic or Paris green, covered with wire-cloth so that no bees can enter. The Schweizerische Bienenzeitung says this will not only kill the ants, but their brood as well.

**The Size of a Queen-Cell,** in Australia, according to an article in the Australian Bee-Keepers' Review, is that of an acorn, and of the same shape. Queen-cells must be larger in Australia than here, or acorns smaller.

# Contributed Articles.

## Honey Exchange in California—Other Subjects.

BY PROF. A. J. COOK.

IT is a safe proposition to make that anything that tends to improve the condition of the laboring classes, especially the farming part of a community, greatly benefits the whole country. It is equally patent that the farming population stand in need of nothing so much as of some system of general co-operation. Co-operation is in the atmosphere of our day. The farmer alone lags behind and is left out in the cold. All other kinds of business people, even the newsboys of the streets, have their combines. What would our railroads do except that they pool their occupations and all pull together?

I remember one day I was in San Diego, a little after noonday. I must make El Cajon that afternoon, and get back in time for the morning train home. The El Cajon train had left; the distance and roads forbade a wheel, and I must, perforce, depend upon the liveries. I asked the price, and thought the terms exhorbitantly high. The man at the stable stated that it was a long drive, and that I was to make it in quick time. The roads were heavy, and two horses would be required. Said he, "It is not too much."

I still had my opinion, and asked if there were other stables in the city. "Yes," he repiied, "there is one just across the street and several others near by. But," said he, "you will get no better terms. All the stables of the city have combined on prices." I thought, "Good," and secretly wished that all the farmers had combined.

The Citrus Fruit Exchange of Southern California has now been in operation for over seven years, and has been an eminent success. These are the things which it has done: Greatly lessened the expenses in preparing to ship; secured a more perfect grading of the fruit; employed salaried agents of their own in all the leading cities; developed new markets in the East; with surprising success distributed the fruits in the East with such skill as to prevent overcrowding or ruinous competition, and at the same time keeping all the markets supplied; doing all their business at an expense of less than three percent, and though the goods marketed bring in millions of dollars each year, they have met with almost no loss at all—less than one-eightieth of one percent during all their years of business. The receipts of their business the past year have been over eight millions of dollars, and yet there has been no loss at all. This is only one of several years with a similar record.

The wonderful success of this organization has proved, first, that co-operation among farming classes is possible; secondly, that here, as elsewhere, it means a tremendous increase in the profits of business. It works prodigious benefits in two ways—lessens the expense, and greatly advances the market price of the goods to be sold. This organization did one most important thing, if success is to crown the efforts of any such undertaking. They secured a very bright, able man to serve them as their manager—a man who could run a railroad or successfully manage any great corporation. Of course, this requires a large salary. They have paid it, and so far as I know have never grumbled at so doing. Here, too, they have followed the railroads, insurance companies and other such institutions.

I doubt if any farming enterprise throughout the country has met with greater success than has that of the Citrus Orchardists of Southern California. This, too, in the face of the fact that they have to ship their goods often for four thousand miles at exhorbitant traffic-rates. Except for this Exchange, I believe the business could not have been maintained. Many of our best orchardists believed that the Citrus Fruit Exchauge saved the citrus industry from ruination.

Last week the honey-producers of this section of the State met at the Chamber of Commerce in Los Angeles, and after due deliberation decided to organize after the fashion of the Citrus Fruit Exchange. I think they have modeled their association entirely after the pattern of the other organization. If they are as wise in their selection of their manager then they can hardly fail of success. Indeed, they have more to hope for than did the other organization at the time of its inauguration. The Citrus Exchange feels a deep interest in all kindred co-operative movements, and have liberally offered to give them the advantage of the services of their agents in the Eastern cities. As these agents have been selected with great care, and are men of rare business energy, tact and acumen, they cannot help but be of signal service to this new enterprise. Similar organizations have been effected by the deciduous fruit-men, the walnut men, and the celery growers, and in every case these later organizations have greatly profited by just this courtesy—service of the salaried agents in the East. So far as I know, nearly all of the members of these several organizations are greatly pleased with their success, and believe heartily that they have substantially bettered their condition by this form of co-operative effort. I sincerely hope that other people throughout the land engaged in agricultural pursuits will also copy this exchange system of Southern California, that these evident benefits may be widely extended throughout our country.

I am all the more hopeful that the bee-men will make their new effort successful, as I hope it will be leaven that shall tell in its influence the country over. Apiarists are usually bright, intelligent, enthusiastic, and given to reading and studying. This will make it easy for other sections to copy any successful method that may bring conspicuous success. I believe the honey-producers of central California and of Arizona have already taken action. If they have not followed the plan which has been so markedly successful with our citrus orchardists, it behooves them to study into this system at once, and if it seems wise, incorporate its cardinal features in their own methods of work.

### DISINFECTING FOUL-BROODY HIVES.

I was greatly interested in reading the discussion on disinfecting hives which occurred at the Buffalo meeting. It seems to me that the experience of Mr. McEvoy makes it certain that this expense is unnecessary. I am not surprised that this is so. We are told by experts that the sputum of consumptives if exposed to the sunshine a few minutes loses its power of contagion. It will be remembered that Prof. Waite has shown that the microbes of pear-blight soon die and lose their power for harm if permitted to dry. They must be incorporated in the unctuous environment of pollen-grain or stigma secretion to be potent for harm. It is probable that the resin of buds serves them in like manner. We can easily believe, then, that honey must be the medium of transportation in order that the bacilli of foul brood may maintain their virulence. I think bacteriologists have claimed that these foul-brood microbes exist in the blood of the mature bees, including the queen, yet we have every reason to believe that the malady is spread only through the medium of honey. The suggestion given above also explains this peculiarity.

### HONEY PROSPECTS FOR 1902.

The past week has been one of great encouragement to Southern California. Prosperity in every line here hangs upon the rainfall. We sincerely hope, and expectantly trust, that a generous season's rainfall was ushered in on last Tuesday, by a fall of a one-half inch of rain in a half hour. The ground was so thirsty that even the most of this was drunk up so that very little ran off. On Friday another very general downpouring commenced, which, up to Sunday morning, had aggregated two and one-third inches. It has rained some since, and the weather is yet threatening.

I believe California is hardly second to any other country in the production of honey, even though it has many barren years. When we have a year of bounteous rainfall, we then prove a record-maker. Only to imagine an apiary of 200 to 600 colonies all in one locality, and each colony producing upwards of 200 pounds in a single season! An apiarist with such a record can afford occasional years with no product at all. This is the more true from the fact that we have no winter problem in California. Bees fly and gather honey every month in the year. If we except the matter of starvation and foul brood, there are no evils that confront the apiarist except this one of drought and no harvest. Of course, no good apiarist will permit his bees to starve.

We have an excellent foul-brood law, by aid of which each county can secure a competent inspector whose duty it becomes to stamp out this disease wherever it has gained a foothold. Nearly all the counties where bee-keeping is at all important are proceeding under the law.

Droughts are not sufficiently common to become an offset against the enormous production of favorable years.

### THE LONG-TONGUED DISCUSSION.

It is an encouraging sign that the bee-keepers have become so generally interested in the matter of the tongues of their bees. It is not alone in connection with the red clover that this matter assumes importance. There are other flowers than the red clover with long netcar-tubes. While it is true

that Italian bees are more persistent workers than are Germans, yet I feel confident that the greater production of honey which comes through this race is not a little due to the fact that they can reach the nectar of many flowers where it is entirely inaccessible to the common black bee.

Mr. Hawley, of San Diego county, said to me a few days since that certain queens which he obtained from an Eastern queen-breeder had greatly surpassed all others in his apiary. I believe that much of this is due to this matter of longer tongues. Some years ago I measured a large suite of tongues from different races. They were all treated in exactly the same way, and I have no doubt that the results were reliable. The record was decidedly in favor of the yellow races.

I am also firmly convinced that the careful bee-keeper can do very much to breed bees that shall have these longer sucking-tubes. It will be remembered that the glossometer which I invented some years since, and which secured a medal at the Paris (France) Exposition, makes it easy for us to determine what bees possesses the longest tongues. In this instrument a square of glass is stretched diagonally from the edge of a similar-sized fine wire gauze to within one-half of an inch of the opposite end. The two triangular edges of this enclosed space consisted of wood. The fourth half-inch space was also closed with a wooden door. By smearing the glass with nectar and placing the instrument in the hive, it was easy to see which bees possessed the longer tongues. If desired, the glass can be ruled, and the distance of each line from the gauze marked. I have no doubt that with this glossometer, coupled with care in breeding, any apiarist might soon secure bees with much longer tongues than he would otherwise have in his apiary. All are free to make and use this glossometer.

Los Angeles Co., Calif., Oct. 28.

## James La Barre—Originator of V-Shaped Top-Bar.

BY JOHN R. SCHMIDT.

MR. JAMES LA BARRE, a bee-keeper from the wilds of Kentucky, is not only an accomplished bee-master but also a master of long-distance walking, he having walked from Covington, Ky., to Washington, D. C., a distance of over 600 miles in 23 days.

JAMES LA BARRE.

This was not done for the mere satisfaction of a foolish notion, or accomplishing a senseless bet, but for the purpose of obtaining justice; and, secondly, the means of livelihood justly due him for his services to his country during those long, bitter days of the Civil War.

Through hatred and jealousy, an officer of the company in which he served, caused a serious charge to be placed against him, for which he was promptly court-martialed without even a chance to defend himself. Years after the close of the War, La Barre applied for a pension, and was immediately confronted with the court-martial, and his application was "turned down." His untiring endeavor to clear his name of the so-called injustice done him, led to his going to Washington on foot, to plead his cause before Congress. The case was unheard, owing to the short session of that body last fall, but undismayed by this failure, and with the able assistance of Hon. Shattuc, he will endeavor to be more successful this fall, and vows he will not give up until the unjust charge is removed, and, if necessary, expected to start from his home in Kentucky, again on foot late in October, in order to be present when the body met.

Mr. La Barre is a bee-keeper of extremely keen observation, and one of many practical ideas; his extensive knowledge of the bees having been gleaned through this method, as he reads little from choice.

It is not generally known that it was he who first conceived the idea of a V-shaped top-bar as a comb-guide. Early in the 60's he accidentally noticed that the bees in a box-hive, in building their first comb, extended it along a strip of wood which had been nailed on the inside of the box to cover a crack. Quick to see the point, he applied V-shaped strips where *he* wanted the combs built, and the bees, true to their nature, used these as starting points.

In 1877, while visiting the late Chas. F. Muth, he mentioned the matter, and asked him to apply the V-shaped bar to the frames in the Langstroth hives manufactured under his supervision. It was done, and afterward the V top-bar became a fixed feature of the Langstroth portico hive. Several have claimed this invention, but Mr. La Barre being indifferent as to who reaps the benefit of his bee-knowledge, remained quiet and let them fight it out among themselves.

From boyhood Mr. La Barre has kept bees in Old Kentucky. The many years of association with these loved ones is turning his hair a silvery gray, and bending his once sturdy form. Nevertheless, he loves them still, and the increasing silvery condition of his fast-fading hair only tends to personify a mind that is as clear as a bell. Hamilton Co., Ohio.

## Odds and Ends of the Season Cleaned Up.

BY G. M. DOOLITTLE.

BEING mainly through with the hurry of the season of 1901, I have had a little time to look over more carefully the different bee-papers coming to my address than I could do in my hurry during the busy season when they arrived. And in this looking over I came across some items which I will say a few words about.

### "SPHYNX-LIKE"—GOLDEN BEES.

The first of these items is found on page 601 (Sept. 19), where Mr. Hasty seems to think that I should do some "shouting" for the "Golden Bees," if they are desirable. And, "on the other hand, if they are undesirable bees, sphynx-like silence while selling them by the hundreds, looks too much like the spider-and-fly sort of ethics." So it would look as if I was compelled to say something in this matter (even though it may look like a little free advertising), or allow the thought to go out that I was willing to play the "spider-and-fly" act.

The real truth is, Mr. Hasty, that I have never "pushed" either the golden or the leather-colored bees, but simply advertised *Italian* bees and queens, making no claims other than the following, which appears in my circular:

> After having thoroughly tested all other races of bees, I have discarded all but the Italians, as none proved so good with me, all things considered. I have taken great pains to breed my bees up to the highest standard of perfection as *honey-gatherers*. I do not claim all that purity of stock that some do, nor lay so much stress on golden bands, but I *do claim* that for *honey-producing* my bees are second to none."

That is all there is of it, Mr. Hasty; and I will leave it to your own good judgment whether there is any "spider-and-fly sort of ethics" there or not. As nine out of ten order the *goldens*, I send them what they order, just the same as I do the other tenth who order the leather-colored stock. Perhaps I can make the matter a little plainer to you.

Mr. Hasty has two daughters. Both are excellent, good girls, and as to excellence of character, winning ways, and working qualities, there is really no choice, which Mr. Hasty knows by years of association. But one has blue eyes and auburn locks, while the other has raven hair and jet black eyes. Mr. Hasty loves both of these girls alike, and sees the goodness of both, regardless of the color of their eyes or hair. In the course of time two young gentlemen come along, and one is infatuated with the golden-haired daughter, while the other sees nothing but perfection in the dark hair and eyes of the other. The first thinks it very strange that the father can not see that the daughter with the auburn hair and blue eyes is superior in every way to the other, and wonders that he is not continually praising her; while the second is considerably "riled" because "Old Man Hasty" is not loud in proclaiming that the one with raven hair and black eyes is the ne plus ultra of the whole family. But Mr. Hasty keeps on in the even tenor of his way, saying, "Both are good girls."

I was never guilty of pushing color or extreme purity, for, like "Pa" Hasty, I have never been able to see that there was anything but minor differences between the two grades of Itatians, namely, the dark-colored or golden. And so I have done, as undoubtedly Mr. Hasty would do under like circumstances, allowed the lover of each to make his own selection. But as I was accused of "pushing" the goldens, I simply denied the truth of such a statement, without stopping to qualify the matter as I have taken pains to do here, through Mr. Hasty's having compelled me to do it, that I might not stand as a "fraud" before the public.

"A BACK NUMBER."

And "John Rambler" (page 745 of Gleanings), thought that Doolittle was doing all the "whacking at long tongues," because he was becoming "a back number." Bless your heart, old friend, Martin, I care not whether I am a back number, a middle number, or wheresoever I am, if I can only aid some brother or sister bee-keeper, by making the road a little easier for them. The motto "on the wall" when I am writing for publication has always been, "Help a little." You know the "*good* Book" says, "Bear ye one another's burdens," and, also, "Inasmuch as ye did it to one of the least of these, ye did it unto me." And the man who is working for the uplifting of humanity, by the way of adding his mite to the sum total of knowledge, cares not where he stands in the ranks, and does no "whacking back" because some one remarks on his "losing prestige."

I said what I did on the long-tongue matter because I believed that the pushing of a premature, if not a fallacious, matter, would work injury to the greater number of the bee-keeping world; and results have proven that I had cause so to do. And I pushed with the "vigor" accorded me, that all would know that it was not a "milk and water" halt I was calling. I see that it was necessary under the "stampede" then on, to "swing the red lantern" with all my might, no matter how badly I was "pommelled" for so doing. And I did it, and got the pommelling, too. But I freely forgive *all*, and especially Mr. W. T. Stephenson. (page 598—Sept. 19,) as he did it with the best of motives. Neither can I "place a higher value on long tongues," as Editor York thinks I may (page 627—Oct. 3,) after my experience of the past summer, for the results prove, by a careful measuring of tongues by Prof. Gillette, that those Italians having the shorter give by far the larger yields of red-clover honey. And this also proves that the long-tongue fad was not only permature, but a mistake as well. It is also well to proceed slowly when stepping upon an untried "structure."

LARGE YIELDS—A CORRECTION.

On page 637 (Oct. 3), there is recorded a yield of 340 pounds of section honey, all nicely capped and marketable, together with 10 pounds of honey in sections partly filled, making 350 as a total of section-honey from one colony. And the producer, Mr. John Lenney, wishes to know if "this is not the best record that you have ever heard from one colony;" to which the editor replies in a foot-note: "Yours is certainly a good yield of honey, but we believe Mr. Doolittle once secured 566 pounds of comb honey from one colony in one season." The correction I wish to make is that the 566 pounds which my colony gave was *extracted* honey. (Correction accepted.—Ed.)

My highest yield of comb honey from a single colony in one season was 309 pounds, hence Mr. Lenney's colony went ahead of mine 31 pounds, of marketable honey (as my 309 pounds was all nicely finished), or 41 pounds in all. And unless I have failed to note or remember, Mr. Lenney's 340 pounds of marketable section honey from one colony in one season is the largest yield ever reported, and he should have the credit of it, and of standing "at the head," until some one can rightfully claim that place with a larger yield.

HONEY PRICES—BEING MISUNDERSTOOD.

It seems at times, that, try as hard as I may to make a thing plain, some will misunderstand what I write, and I "fell to wondering" whether the trouble was on my part, or on the part of the reader. Very likely on the part of both, for such is generally the case. My mind was called afresh to this matter in reading page 749, (Nov. 21). There I am credited with advising, in Gleanings, that the producer *retail* his honey at 12 cents a pound where the market quotations will lead us to expect that some commission merchant in a distant city would sell the same at 13 to 15 cents; and nearly a column of space was taken to prove that such advice was wrong.

Well, had I ever given such advice it *would* have been wrong, and surely Editor Root would not have endorsed such a *wrong* thing by putting at the head of that article, or "conversation," the words "orthodox advice," as he did, this showing that E. R. Root understood the matter in the light of selling at *wholesale* (not at retail), as I intended to advise. I have always considered it worth 2½ cents a pound to retail honey by the section, where the same was peddled from house to house, as we would infer that Mr. J. L. Hyde proposes to do with the 700 pounds he will sell out of his 1000, "by a little push of it to families in my vicinity." Pushing it around to families cannot very well mean aught but a retail trade, and hence, in this case I would advise a price of 14½ cents with a prospect of honey selling at 13 to 15 cents abroad.

In the conversation alluded to in Gleanings (pages 781-2—Aug. 15), the reader will note that the honey was all graded and *cased*, which meant the selling by the case at least, and selling by the case is generally considered as a wholesale affair, even though but a single case is taken.

Then I spoke of prices at our nearest *railroad station*, which, it seems to me, could not possibly be construed into a retail affair. And again, I spoke of selling *outright*, which means the disposing of the *whole* crop in a lump; yet notwithstanding, Mr. Hyde interprets *all* of this as meaning "the market price at 12 cents retail."

Then, having misunderstood, he goes on to argue how such advice as I gave would bring the price of comb honey down to 8 cents a pound as "the established price." And "Mr. Hustler" readily sees "why men should not jump at everything that is printed in the bee-papers." When a man starts into a line of reasoning based on false premises, it is quite easy to see something which is not a reality, and a something which would never have "seen the light" had said man made sure he was *right* in his premise at the start.

No, no: Doolittle would never advise doing anything to lower the price of honey, so long as the honey-producer stands to a disadvantage when compared with most of the products of others; nor would he advise ever selling at wholesale where the producer can retail his product at a price enough higher to compensate amply for the labor of retailing.

HONEY ON COMMISSION—A MISTAKE.

Then I think Mr. Hyde makes a mistake where he concludes 300 pounds of honey "is not enough to sell on commission," by which I take it he means that 300 pounds would be too small an amount to ship to a commission merchant in some distant city. Some of the very best sales commission merchants have ever made for me—sales from one to three cents above market quotations—have been where I have shipped them only from 100 to 200 pounds. In fact, the records of these transactions for the past 23 years show that in no case where I have shipped commission merchants 1000 pounds or more of honey has he sold the same at as good an average price as has the same man or firm where I have shipped only from 100 to 200 pounds at a shipment. And the freight is no more per hundred pounds in a single hundred pound shipment, than it is where ten or twenty-five hundred is shipped, as it is always reckoned at so much a hundred pounds, as far as I have had freight-rates quoted to me; with no restrictions as to the number of hundred pounds that must be sent at one shipment.

My idea as to why a small shipment sells for a better price than a large one is, that many of the small grocery men can dispose of the whole of a small lot of honey, where they could not do so with a larger lot; and as the commission merchant is better pleased at not breaking up a shipment, the smaller lots go first, while the prices are generally at their height, or their best: and the larger shipments are only broken up later on, or sold as a whole, and so sell at the reduced price that generally obtains after the holidays are over.

Then, again, the smaller lot is more in the line of a retail trade with the commission merchant, and as the smaller grocer can get just what he wants in the small lot, he purchases the same, even though he pays a little more for it. So don't think that where a bee-keeper has from 100 to 500 pounds more than his home market calls for, that it will not pay to ship the same on commission, for it will pay in two ways: First, it will bring as much, or more, than a large lot in market; and, second, the sending of it away often saves the breaking down of the home market, through the lowering of prices.

Onondago Co., N. Y.

# The Buffalo Convention.

## Report of the Proceedings of the Thirty-Second Annual Convention of the National Bee-Keepers' Association, held at Buffalo, New York, Sept. 10, 11 and 12, 1901.

(Continued from page 822.)

Prof. M. B. Waite, of the Department of Agriculture, Washington, D. C., also delivered an address on "The Relation of Bees to the Orchard," but a copy of it has not been secured for publication.

Pres. Watrous then called upon Prof. S. A. Beach, of the New York Agricultural Experiment Station at Geneva, who read the following paper, on

### Spraying in Bloom.

Spraying commercial orchards to prevent attacks of injurious insects and diseases is a practice of comparatively recent origin. According to Lodeman (Lodeman, "The Spraying of Plants," 63, 65), the first published record of successful treatment for the coddling moth by spraying with Paris green, is in the Report of the Western New York Horticultural Society for 1879, and the first publication of a regular experiment station to give the results of using Paris green against this insect, is the Annual Report of the New York State Station at Geneva for 1885.

In the period from 1887 to 1894, through the efforts of the United States Department of Agriculture and various agricultural experiment stations, it was demonstrated that by the use of certain fungicides, notably the Bordeaux mixture, some of the most serious orchard diseases, such as apple scab, pear scab, quince leaf and fruit spot, and plum leaf spot, might be kept under control. During the latter part of this period some fruit-growers commenced the practice of spraying orchards systematically to prevent certain diseases. In the treatment of apple, pear, and quince orchards Paris green, or an equivalent arsenical poison, came to be usually combined with the Bordeaux mixture so as to apply both an insecticide and a fungicide in one treatment.

As early as 1889, Cook, then entomologist for the Michigan Agricultural College, stated that bees might be poisoned with Paris green sprayed upon fruit-trees when in bloom. He urged that spraying should not be practiced during the blooming season, and that, if necessary, such a requirement should be made by law. (A. J. Cook, Bul. 53, Mich. Ex. Sta.: 4, 5.)

After that, whenever experiment-station writers published directions upon this point, they uniformly advised against spraying in bloom. In 1896, Webster published the results of experiments conducted at the Ohio Experiment Station in 1892 and 1894, by which it was proved that bees are liable to be poisoned by working on blossoms sprayed with Paris green or with Bordeaux mixture and Paris green. He reports that shortly after some trees were sprayed, one of the colonies of bees located near by became extinct. Arsenic was not only found in the abdomens of the bees, but it was also found in the dead brood in the hive. (F. M. Webster, Bul. 68, Ohio Ex. Sta.: 52.)

We have already noticed that even prior to 1895 some fruit-growers had adopted the practice of spraying their orchards for the prevention of fungus diseases, and of combining with such treatment the application of arsenical poisons to kill the insect enemies. Such was their success that their example was soon followed by many others, and within the next three of four years spraying came to be generally regarded as a necessary operation in successful orchard management. But some of the fruit-growers experienced more or less difficulty in trying to follow the instructions of the experiment stations as to when the spraying should be done, especially in treating large apple orchards. In this eastern section of the country, the apple orchard, as a rule, constitutes but a portion of the farm, the remaining portion being devoted to other crops. At the time when spraying should be done, other important farm work also demands attention. This is especially felt when the season has been unfavorable for field-work. Under such circumstances, when the fruit-grower was crowded with work, the practice of spraying apple-trees in bloom has had its origin. It was tried at first from considerations of necessity or convenience rather than from any idea of the superiority of this plan of treatment over that recommended by the experiment stations. Orchardists who had not completed the spraying of their trees before the blossoming season began, continued to spray in some instances after the blossoms opened. They chose to take the risk of injuring the crop by spraying in bloom rather than risk injury from diseases and insects. Later, the idea that the best time of all for spraying is when the trees are in full bloom gained considerable headway.

As soon as they found that fruit-growers were beginning to spray orchards when in bloom, the bee-keepers at once became much concerned over the effect of such a practice on their business. The publications of experiment stations and of the United States Department of Agriculture assured them the bees were liable to be poisoned by working on blossoms which had been sprayed with insecticides. In New York State the bee-keepers set to work vigorously, and by 1898 secured the enactment of a law which still stands on the statute books, making it a misdemeanor to apply any poisonous substance in any way to fruit-trees in bloom. (Chap. 325, Laws of 1898.) Some of the fruit-growers had by this time become so thoroughly convinced that better results could be obtained by spraying apple orchards in bloom than by spraying at any other time, that they strongly opposed the passage of the law and afterwards tried to get it repealed. Unsuccessful in this, but still confident that their views were correct, they kept at work until an amendment to the law was finally secured, whereby the experiment stations at Cornell University and at Geneva were permitted to spray plants in bloom for the purpose of testing such treatment in comparison with the treatment commonly advised. Accordingly, in 1900, work on certain phases of this subject was undertaken by both of the stations named above. The results, so far as published, are given in Bulletin 196 of the Geneva station, to which publication those who are especially interested are referred.

One of the questions bearing upon the subject of spraying in bloom which is sometimes asked is, whether treating the open blossoms with the spray mixtures does not directly help to set the fruit. An understanding of the way fruit sets will conduce to a clearer idea of what influence the spray mixtures may reasonably be expected to have in this direction. An apple-blossom cut through the middle shows different parts as here illustrated: (The following 6 illustrations are from Bulletin 196 of the New York State Agricultural Experiment Station, Geneva, N. Y.)

The outer green portion which covers the bud is called the calyx. When the blossom opens, the calyx turns backward. It persists on the fruit where it may be seen by examining the blossom end of the apple. Next, within the calyx are the showy flower-leaves. Neither these nor the calyx are essential to the setting of fruit. Up to the time the blossom opens, they give protection to the very delicate central organs, but they may then be cut away without interfering with the setting of the fruit. The essential organs are the stamen and pistil. The pistil occupies the very center of the flower. It divides above into five green threads which at the proper time exude from their tips a sticky fluid. Below it contains the little egg-cells which, when fertilized, develop into seeds. The stamens are thread-like and tipped with yellow sacks of powder called pollen. They surround the pistil. When the pollen alights upon the sticky tip of the pistil—i. e., upon the stigmatic surface, if conditions are favorable—it sends out a sprout in a way somewhat analogous to the sprouting of grain in warm, moist soil. This pollen-tube grows downward through the soft tissues till it reaches the egg-cell, which is then fecundated and thus stimulated to continue growing into seed.

This, in brief, is the way feltilization of the apple takes place. If fertilization does not take place, there is no further development and the entire flower withers and falls away. Since the essential organs are composed of very tender tissues, it is not surprising that injury may follow when they are hit by the spray mixtures. Neither is

it strange that Bordeaux mixture should prevent the germination of the pollen. The Bordeaux mixture holds its position as a leading fungicide, because it prevents the growth of fungous spores. The germination of pollen is more nearly analogous to the germination of fungous spores than to the germination of grain cited above. Since the Bordeaux mixture is deadly to one, it may be expected to have a similar effect upon the other. That it does have such an effect is proved by laboratory experiments which formed a part of the investigations previously mentioned. The ordinary combination of Bordeaux mixture with an arsenical poison prevented the growth of pollen in laboratory cultures, as also did even lime alone, while in corresponding cultures, in which these substances were not present, the pollen germinated and pollen-tubes grew. Bordeaux mixture alone—1 to 11 formula—was added to cultures in varying proportions, and the effect was remarkable. With 200 parts of it in 10,000 parts of the culture media, the growth of pollen was practically prohibited, for the pollen did not grow except in rare instances; 100 parts in 10,000 in some cultures, but not in all, wholly prevented the germination of the pollen; sometimes 50 parts in 10,000 gave a similar result, and even the very slight proportion of 2 parts in 10,000 in some cases showed an unmistakably adverse influence on pollen-germination. Since pollen must alight upon the stigmatic surface, and there germinate before fertilization can take place, these results are highly significant to the fruit-grower.

From the facts which have been presented it is clear that applying the spray mixtures on the open blossoms, instead of assisting directly to set the fruit, may wholly prevent it.

But some fruit-growers feel sure that spraying in bloom has caused a positive improvement in their apple crop. How can such results be accounted for? One of the worst diseases in New York apple orchards is the scab. Does spraying in bloom give some degree of protection against this disease? It is well known that the amount of damage from this disease varies greatly in different seasons. In 1896, for example, the apple crop was remarkably free from injury from the scab, even on trees which had never been sprayed. In 1898, on the contrary, in Western New York, the scab became virulent so early in the season that in many cases it killed a considerable portion of the blossoms, and later continued the destruction on the immature fruit.

The apple-blossoms grow in clusters having perhaps from 5 to 7 in the cluster, although the number may vary considerably. They do not all open at the same time. The one in the center opens first and is normally the strongest and forms the largest fruit. Those immediately around the central one open next in order, and lastly the outside blossoms of the cluster open. The whole process generally takes from a week to 10 days in this part of the country. It varies with weather conditions. When the last ones are opening, the central blossom has usually passed out of bloom. Not only is there this difference in the time when the different flowers in a cluster open, but also in the same way tree-clusters which are less exposed to the heat of the sun are correspondingly retarded in blooming. Consequently, all of the clusters on a tree do not begin blooming at the same time. It appears, therefore, that there is no one time when all the apple-blossoms on a tree are open. Of those which are open, some are sure to escape being hit in the center when the spraying is done in an ordinary way.

When there is an abundance of bloom, and when the apple-scab becomes destructive as early in the season as the time when the blossoms are opening—as was the case in 1898—spraying once in bloom might not destroy enough of the blossoms to reduce the crop of fruit seriously and yet give a degree of protection against the scab which would result in improvement in the amount and character of the crop; but it has not yet been demonstrated by rigid experiments that even in such a season spraying in bloom gives superior results to those which may be obtained by spraying just before and just after the blooming season. In order to get conclusive evidence on this point, it will be necessary to continue the experiments till a season arrives when the conditions are somewhat similar to those which obtained in Western New York in 1898.

Does spraying in bloom ever bring about an improvement in the crop by thinning the fruit?

In the experiments reported in the bulletin already cited, it was found that apple-blossoms which were treated with the spray—the ordinary combination of Bordeaux mixture and an arsenical poison—in the early part of the blooming season, generally failed to set fruit. Blossoms which had been open several days before they were hit by the spray seemed to have reached a stage where such treatment did not interfere with the setting of the fruit. Some results which are apparently conflicting, may be reconciled by a clear understanding of this point. It appears that there is a difference between the older blossoms and the newer ones as to their susceptibility to injury from spray mixtures.

Experiments were also made in which portions of trees were sprayed repeatedly during the blooming season, thus hitting the new blossoms as they open from day to day. As a consequence, scarcely any blossoms set fruit, nearly all being destroyed by the treatment.

One spraying, if well done, may be expected to destroy a large portion of the freshly-opened blossoms, and thus thin the fruit. Such a result was in fact obtained in some of the experiments with apples in 1900, and with pears in 1901. In case there is a light bloom, it seems that spraying at a time when most of the blossoms are freshly opened, may cause the loss of a considerable portion of the crop. Some fruit-growers who have tried it have become convinced that spraying under such conditions has caused them very serious loss.

In the experiments in which spraying in bloom has thinned the fruit, the amount of marketable fruit has not always decreased. Such results are similar to those obtained where the fruit has been thinned by hand. This suggests the practical question, whether the process of spraying plants in bloom may be used as an economical method of thinning the fruit. Our experiments on this point have not been carried far enough to give conclusive results.

In our investigations we have tried to find out what effect the application of the ordinary spray mixtures to open blossoms has upon the blossoms and upon the crop of fruit. There is another phase of the subject which interests the fruit-grower, and that is the extent to which bees and other insects are needed for cross-pollination in order to secure a good setting of fruit. It has been proven that with some varieties cross-pollination must occur before any fruit can be formed. Others are fully capable of setting fruit without cross-pollination. Between these two extremes are found many imperfectly self-sterile varieties, among which are all gradations between self-sterility and self-fertility, with corresponding independence of or dependence upon cross-pollination for the setting of fruit. Even some varieties which are classed as self-fertile, may produce better fruit when cross-pollinated than when self-pollinated.

Pollen is naturally distributed from one blossom to another by the agency of either winds or insects. Some kinds of pollen are easily distributed by winds; others are not adapted to wind-distribution, but are easily carried by insects. Apple-pollen belongs to this latter class. Whether or not the fruit-grower may secure better crops when insects aid in distributing the pollen, must be determined by learning the needs in this direction for each particular variety of fruit which he grows. In case he is growing self-sterile or imperfectly self-fertile varieties having pollen not readily distributed by winds, the poisoning of bees and other insects which visit the blossoms would work him injury. He then would have a common interest with the bee-keeper in preserving the lives of the insect visitors of the flowers.

A considerable amount of work has been done for the purpose of determining which ones among our cultivated varieties are self-fertile, and which are imperfectly self-fertile or self-sterile. At some experiment stations further investigations on this subject are in progress. Much yet remains to be done, however, in order that full and satisfactory information on this important point may be available to the fruit-grower.

Another question which is worthy of attention in relation to the subject of spraying in bloom is the effect of fungicides upon bees. We have seen that if spraying in bloom results in an improvement of the crop of apples, such improvement may come in part from protection against the attacks of the scab fungus, and in part from thinning the fruit. Neither Paris green nor any other recognized insect poison is needed to secure these results. They may be obtained by using Bordeaux mixture alone. It is desirable, therefore, to know whether there is any danger of poisoning bees by spraying blossoms with fungicides alone. It is worthy of remark in this connection, that in all of the extensive use of Bordeaux mixture it has not yet been known to poison insects. Finally, from what has been said, it appears that the desirability of spraying in bloom is a subject concerning which more information is needed in order to reach a decision which may be accepted by all

as being correct. Among the questions which should be investigated further are these:

1. May bees be poisoned by spraying open blossoms with Bordeaux mixture or other fungicides not combined with any recognized insect poison?

2. Does spraying just before and just after blooming give as good protection against injurious insects and diseases as a corresponding number of treatments, one of which is made during the blooming season?

3. At what stage of blooming has the process of fertilization progressed so far as to escape danger from the application of spray mixtures?

4. What cultivated varieties may be expected to show improvement in fruit-production as a result of cross-pollination secured through the agency of insect visitors?

The following conclusions must be accepted as now well established:

1. Bees may be poisoned by applications of arsenical poisons to open blossoms. The brood in the hive may likewise be poisoned.

3. The application of ordinary spray mixtures to open blossoms may stop the further development of the blossom, either through the corrosive action of the spray upon the pistil, or by preventing the germination of pollen on the stigmatic surface.

3. With apple and pear trees, having an abundance of blossoms, spraying once in the blooming season has thinned the fruit; spraying repeatedly, so as to hit the blossoms as they opened from day to day, has practically destroyed the crop of fruit.

4. The productiveness of many of the varieties of fruit which are more or less self-sterile, is increased by cross-pollination secured through the visits of insects to the blossoms.

S. A. BEACH.

(Continued next week.)

# The Afterthought.

**The "Old Reliable" seen through New and Unreliable Glasses.**
**By E. E. HASTY, Sta. B Rural, Toledo, O.**

### ANTS AND BEES.

Yes, Mr. Working, it's possible that ants may rob a queen-cell—may do worse, may grapple and destroy a queen. The number of species of ants are immense, and no two species alike; so it won't do to judge of the whole by the species we may happen to have known. Perchance the ants we have known never meddle with grain; but there are ants that will carry it off by the bushel. The ants most of us have known are comparatively harmless to bees; but there are ants so ferocious that bees, unless effectively protected, can not survive near them at all. Bees show anger when multitudes of little ants, too small to grapple with, get scattered among them in opening an ant-infested hive. And if ants abound, don't rub a bee-hive with anything that ants like, preparatory to hiving a swarm in it. Myriads of the little nuisance will go right in; and the bees, if I mistake not, will go out. I may be wrong, but my impression is that ants, bulk for bulk, are much stronger than bees, so that when big enough to be grappled with they are always too strong to be handled. Also, they are very hard and smooth, and afford no flat surfaces, so that getting a sting into one of them is a practical impossibility, likely. Page 680.

### THE UNIVERSAL NEED OF AN EDUCATION.

Both parents and children the country over are still somewhat infected with the pestilent idea that there is no use of very much education unless one is going to be a teacher or something in the professional line. Thanks to Prof. Cook for his attack on that idea, page 682. *Specially* need a rich education in order to be comfortable while digging a ditch or breaking stone. I would also put in strongly: Education prolongs life. Multitudes of people, scarcely old yet, die of a mild, chronic wretchedness. Time and age have rendered the former routine of their lives impossible, and they have nothing to be interested in. Digestion cannot go on properly—we might almost say no other bodily function can go on properly—while the mind is in a state of wretchedness. The net result is that the body deteriorates and ages more in one year than it would need to do in two years; and soon something trifling carries you to the grave.

### FEEDING BEES "GARDEN SASS."

And so Louisiana wants to set his bees to eating vegetables. As the extreme South has no wintering trouble except starvation, teaching the bees to eat "garden sass" would be in the nature of a panacea. He finds they eat somewhat at baked sweet potatoes. Let him feed 'em a big lot more—and then tell us instead of expecting us to tell him. Possibly the Californians can go him one better by feeding cooked sugar-beets. The Italians are already in the van by raising watermelon patches and feeding melons sliced on the ground. And Dr. Peiro—but then he's no "garden sass." Page 712.

### TWO KINDS OF DRONES FROM ONE QUEEN.

Two kinds of drones from the same mother is not exactly evidence in favor of absolute purity, we grant. I think it is very common, however—so common that such a queen is not called impure. We say instead that the Italian (not far back) is a mixed race, anyhow. Page 716.

### "ROAD-TRAP" FOR RABBITS.

Iowa comes to the front with bad roads that serve the useful purpose of rabbit-trap. Bunnies think they can get across to the other side and get awfully taken in. But—look out there! You'll get trapped, too, if you don't exercise care in getting the game from the trap. About the first report we've had in favor of a clay road at its prettiest. Page 717.

### VETCH NOT A GOOD HONEY-PLANT.

Glad to hear from the man who raised vetches by the acre for years—I. Hiller, Washington State. It seems that (like cowpeas) bees work on the stems, not on the flowers—but no surplus from that, not even results enough to stimulate brood-rearing. The consensus of a number of reports seems to be that it is rare to see a bee on the flower of the vetch. Page 717.

### CALIFORNIA VS. AUSTRALIA.

I am surprised at the Australian Bee-Bulletin for inquiring why California beats Australia in honey. Next they'll be asking why British Colonial government isn't so good as American State government. Page 718.

### THOSE STONE SHADE-BOARDS.

Stone shade-boards! And they're pretty, and well liked, and only cost a few cents each. If Mr. A. E. Willcutt will cut us all a supply and arrange to send them by mail, we'll propose him three cheers. Pages 722 and 727.

### SOME "LONG SMELLERS" IN OHIO.

Why, Mr. York, you ought to be willing to credit the bees with longer "smellers" than we'uns have. When Wood County oil and gas was in its prime we often smelled it unmistakably plain and strong 30 miles away. We are due north, so only an occasional turn of the soft south wind would bring it. On one or more occasions I waked up in the night and smelled it without going out-of-doors. As a matter of an opinion I am well persuaded that, on just such a moist and gentle south wind, and at morn, before the currents of the day have got started up, bees could smell a forest of basswood in bloom much more than 30 miles—many times over as far as they could afford to go to it. Page 724.

### A MINIMUM OF UNFINISHED SECTIONS.

On page 727, Mr. Doolittle writes well on the minimum of unfinished sections. For years I have had very little trouble from that source. Wonder if it's locality, or strain, or kind of super. It is certainly not any fussing on my part to prevent it—and I *think* that locality plays on the wrong side: Strain and style remain; and I guess it's both combined. Good hybrids of long standing, and the (now unusual) two-story wide-frame. Four bait-sections all in one frame—two above and two below—and that frame put to the warm side of the middle. Always 40 or 48 sections put on at once. Notice: Let no beginner copy at wholesale till he asks his bees whether they like that sort of thing. Mine do. In a poor, lean field, which, nevertheless, has possibilities all the season long, it's just the lazy man's halielujah arrangement—put it on in June and take it off in November.

### BREEDING FROM THE BEST.

Dr. Miller's answer to South Carolina on page 729 is right. (Breed from both.) But still, if you have excellent bees, and are trying to make them better, the longer line of unbroken excellence you can get the more hopeful the last queen ought to be as a breeder. This on general principles—not drawn from any particular set of cases.

# Questions and Answers.

CONDUCTED BY

*DR. C. C. MILLER, Marengo, Ill.*

[The Questions may be mailed to the Bee Journal office, or to Dr. Miller direct, when he will answer them here. Please do not ask the Doctor to send answers by mail.—EDITOR.]

## Clarifying Beeswax.

Some foundation I bought two years ago I have melted and sold as wax, not having need for more foundation; but this does not have the golden yellow appearance as wax which it had as foundation, and which the purchaser of the wax insists it must have, or cut the price heavily. It was strained through muslin when melted; it is not dirty, but has a very cloudy appearance. I have seen reference to the use of sulphuric acid for producing the golden yellow color, but I tried it and it made the color worse than before, and the wax was inclined to be mealy and crumble easily.

IOWA.

ANSWER.—Try cooling it slowly. If you have not had much experience with beeswax it is possible that when you have it melted you allow it to cool very rapidly. The result is that the particles of impurity have not time to settle, and are frozen in wherever they happen to be, giving a more or less dirty and cloudy appearance. While the wax is very hot, there will be more or less movement among the particles, somewhat after the nature of boiling, and there will be no settling of impurities so long as it is in this condition. After it becomes cool enough so there is no movement akin to boiling among the particles, try to keep it in this liquid condition a long time, and by the time it begins to assume the solid condition the particles of impurity will have had time to settle.

A small quantity is harder to manage than a larger quantity. If the quantity is small, you can help matters by having water in the vessel with the wax, for a gallon of water with a gallon of wax will stay hot longer than the gallon of wax alone. Let the wax stand on the stove and let the fire die out in the evening, and in the morning you may find it clarified. Keeping the wax covered will keep it hot longer. If the quantity is small enough, a good place to put it is in the oven of a cook-stove just before the fire dies out in the evening. Put the stove-handle in the oven and shut the oven door. Hunting the stove-handle in the morning will help to keep you from forgetting to take out the wax.

## Long-Tongued Bees—Mating in Confinement—Black or German Bees vs. Other Races.

1. Have the expectations of those who purchased queens of the "long-tongued" variety been fulfilled?

2. Has there been any advancement made "along the line" of having queens mated in confinement the past season? Hasn't some one been experimenting with the tent method?

3. Are not the black or German bees the hardiest we have? If not, why are they likely to supersede the other races?

MASSACHUSETTS.

ANSWERS.—1. I don't know. Very likely some are disappointed, and some well pleased. Some may have expected a great deal too much. Length of tongue alone will hardly warrant a perfect bee, although some good authorities seem to think that bees with tongues of unusual length are more likely to have unusual industry. Without knowing anything positively about it, I should suppose that a bee with a very long tongne *might* be lazier in some cases than its fellows with shorter tongues. Other things being equal, Mr. F. B. Simpson says he would prefer long tongues, and so should I. But we can hardly settle that long tongues are of great value just from a single case or two. Neither are we warranted in entering a general condemnation from a single case, as Mr. Doolittle seems to have done on page 775 (1901).

2. I do not know that there has been anything later than the tent method, so fully published some time ago.

3. I don't know. It is possible that blacks may be hardier, but that fact, if a fact, is not proven by the fact that Italians become mixed with black blood. That may come from the mere fact of numbers. I think it is not so hard to keep out black blood as it was some years ago, and it would probably be an exceedingly difficult thing for most bee-keepers nowadays to keep blacks pure.

## Rearing Italian Drones and Queens Early.

I have two colonies with Italian queens from which I want to rear queens and drones in the spring. How early should I begin stimulating in order to rear them before the black bees of the neighborhood start breeding.

CALIFORNIA.

ANSWER.—It is not considered advisable to practice stimulative feeding before blacks start breeding at all. For bees wintering outdoors, whether black or yellow, begin breeding before the weather is warm enough for bees to fly, and it is not advisable to stimulate bees by feeding when they cannot fly out about every day. But as soon as weather comes so that bees take daily flights, then you may begin operations. If there are flowers from which they can gather freely, stimulative feeding will make little difference. But if there come days when the weather is good but pasturage lacking, then a little feeding will keep up brood-rearing.

See that the colony from which you wish to rear drones has abundance of stores, and make every effort to have it strong. Add frames of sealed brood from other colonies (brood from black colonies will be all right), so that the colony will be very strong, and put frames containing more or less drone-comb in the middle of the brood-nest, and you will have done about the right thing to have drones earlier than the average.

## Killing Bees in Box-Hives and Extracting the Honey.

I have bought bees in 20 box-hives that I wish to kill and extract the honey from the combs. As I cannot use an extractor to get the honey, please tell me how to get it from the combs. Also, the best way to kill the bees.

INDIAN TERRITORY.

ANSWER.—Kill the bees either with sulphur or bisulphide of carbon. Without an extractor I know of no way to get the honey out of the combs without injury to the combs. If you do not care to preserve the combs, melt them (honey and all), allow the mass to cool, then remove the wax from the top. The probability is that the honey will not be of the best quality, for it does not take much heating to spoil it. Set the vessel containing the honey in another vessel containing water, and let the heat be so mild that it will be a long time melting, and the honey will be better than if rapidly melted with great heat.

## Unusual Amount of Dead Bees.

I have 24 colonies outdoors, well packed, but there is an unusual amount of dead bees in front of the hives at this early date (Dec. 4.) What is the cause? and what may I expect as a result in the spring?

ILLINOIS.

ANSWER.—I don't know. It's an exceedingly hard thing to pass judgment at long range without particulars. It may be there is nothing wrong. Sometimes an unusual number of old bees, or a number of bees of unusual age, may make a larger showing of dead bees, in which case you may expect weaker colonies in the spring. The kind of weather may have something to do with it. If bees are confined to the hive a considerable time by very severe weather the appearance in front of the hive will be different from what it will be if the weather is warm enough to allow the dead bees to be partly cleaned out but not carried away. In any case, all you can do is to see that the bees are as well protected as possible, and hope for a favorable spring.


### Sulphuric Acid to Cleanse Beeswax.

Asked as to the strength needed, Gleanings in Bee-Culture says:

Sometimes a 5-percent solution will do the work; then as strong as is required. That is to say, one part raw acid to 10 parts water; but if the wax is very dirty or black you may require to use as high as 25 percent. Use acid enough to get the yellow color. It is cheap; and when you have secured the proper color you can make your wax enough more valuable to more than pay the expense of the acid.

### Increase of Honey-Yield.

Very often we see the question asked: "Is there any plant that will pay to grow for honey alone?" Whether such a plant exists I will not try to say, but I do wish to say that this question sounds a little foolish, for who would wish to cultivate a plant that furnished only nectar, while there are so many nectar-yielding ones, which furnish also excellent crops of fruit and grain? I am of the opinion that new plants for supplying nectar are not half so desirable as would be giving more attention to some of our present field-crops, and study to have them coming on at the proper time to fill up the vacancies between the main flows from the natural sources.

I also incline to the belief that longer-tongued bees are to be desired more than short-tubed clover, for the reason that though the short-tubed clover may be had, advantage over the one single plant is all we have; while by lengthening the bees' tongues till they can work on red clover, hundreds of plants equally as valuable as red clover would be brought within reach of the bees at a single step.—L. E. KERR, in the American Bee-Keeper.

### Don't Be a Clam.

Don't be like a bee-keeper I once knew. He told me he had "invented" a new way of rendering combs; it was far ahead of any other way. I replied, "If it is any better than the solar wax-extractor then it *is* good." "Solar wax-extractor?" said he. "What is that?" I explained it to him. He appeared quite disgusted with himself. "Why," said he, "that is what I have, and I thought that no one else had ever seen such a wonderful thing, and I was going to take good care that he never did." He then took me to where his extractor was, and I tell you it was a crude affair. He did not subscribe to any bee-journal, and so was ignorant of the strides that were being made in apiculture; and when he found out a good thing he kept it to himself instead of telling it, and thus helping to brighten the lot of others. —Australian Bee-Keepers' Review.

### The Bee in Law.

R. D. Fisher tells something about it in Gleanings in Bee-Culture. A decision of the New York Supreme Court is that—

"A man's finding bees in a tree standing upon another man's land gives him no right, either to the tree or bees; and a swarm of bees going from a hive, if they can be followed and known, are not lost to the owner, but may be reclaimed."

Mr. Fisher further says:

Where one discovers bees in a tree, obtains a license from the owner of the soil to take them, and thereupon marks the tree with his own initials, he gains no property till he takes possession; nor can he maintain tres-

pass against a third person who cuts the tree and takes possession of them on a subsequent license from the owner of the soil. The two licensees stand on an equal footing; and he who first takes possession becomes the owner. —Ferguson *vs.* Miller, 1 Cow. (New York), 243.

This case has been commented on adversely, and critics say it is bad law. The better law on this point is promulgated by the Vermont Supreme Court in Adams *vs.* Burton, 43 Vermont, 36, where it is held that one who has obtained a tacit consent from the owner of the soil to cut down a bee-tree thereon, and get the honey, has, while in the act of cutting down the tree, a superior right over a third person to whom the owner has given subsequent consent, but without revoking the former's authority. The court said: "These parties stand, as between themselves and as respects the legal principles applicable to the case, in precisely the same position as though neither had any authority from the owner of the tree, and both were trespassers upon his rights, or as though there were no individual owner of the tree. How, then, would the case stand? No principle is better settled than that a person in possession of property can maintain trespass against any one who interferes with such possession who can not show a better right or title."

With regard to swarms not wild, but issuing from colonies in the possession of a bee-keeper, Mr. Fisher says:

If bees temporarily escape from the hive of the owner, who keeps them in sight, and marks the tree into which they enter, and is otherwise able to identify them, they belong to him, and not to the owner of the soil. In such a case the property draws after it possession sufficient to enable the owner of the bees to maintain trespass and recover damages against a third person who fells the tree, destroys the bees, and takes the honey, notwithstanding such owner himself is liable to trespass for entering on the land of another for a similar purpose without authority. The right of ownership continues; and, though he can not pursue and take them without being liable to trespass, still this difficulty does not operate as an abandonment of the bees to their liberty by nature. Hence, the dictum that "*the owner of the soil* is entitled to the tree and all within it" is true only so far as repects an unreclaimed swarm.

### A Kink in Queen-Rearing.

A little kink I got this year for rearing queens early in the season and late in the fall, when bees will do really good work in any other way, was this: Remove the old queen, then close the hive and gently blow smoke in at the entrance, pounding slightly on the hive till the bees are alarmed so they will fill themselves with honey. Now open and shake half or more of the bees into the nucleus-box I have explained about before. This box is so arranged that the bees have access to what is known as "queen-candy," such as is used in sending out queens in the mails. The box of bees is carried to the honey-house and left till the next day, at which time the colony is given a prepared lot of queen-cups, and the bees put back. They will "go for" cell-building "to beat the band." Twenty-four to 36 hours later put in a frame of honey on either side of the frame of cells, and take all the combs having brood in them from the hive, shaking and brushing off all the bees. This adds a new impetus to the matter, and brings forth queens of the very highest type of perfection, especially if the colony is fed in addition, so that much heat is kept up all the while, till the queens are ready to emerge.—G. M. DOOLITTLE, in Progressive Bee-Keeper.

### Five-Banders Not Uniform.

I never yet have seen *all* the bees of so-called five-banded queens show uniformly five yellow bands. The best average for one queen is, perhaps, 50 percent with five bands; 25 percent with four, and the rest with three. As a rule, we do well to get 25 percent five-banded workers, and the rest three and four

banded, all from the same queen. I never yet have seen a uniform number of bands from any one queen of the extra-yellow stock. —Gleanings in Bee-Culture.

## GENERAL ITEMS

### Good Year for Bees.

This has been a good year here for bees and honey. Most of the honey has been light, very little dark honey in my crop. My bees averaged over 100 pounds to the colony, and I have disposed of almost all of it at a good price in the home market. M. BEST.

Lucas Co., Ohio, Dec. 16.

### A California Report.

My crop from 126 colonies (in fair condition) was 22,514 pounds of extracted honey, with an increase of 10 colonies. I now have 203 colonies. I make my increase in the valley out of a low grade of honey. I keep down increase in the mountains by giving room and ventilation. My crop sold in the retail way at 5 to 7 cents a pound.

S. Q. CONKLE.

Orange Co., Calif., Dec. 3.

### Report for 1901.

My bees did well the past season, yielding an average of about 70 pounds of comb honey per colony. H. G. WYKOFF.

Warren Co., Iowa, Dec. 12.

### Results of the Past Season.

Last spring I had 30 colonies of bees, and I secured 1100 pounds of comb honey and 1200 pounds of extracted, besides increasing to 49 colonies. JOHN EENIGENBURG.

Cook Co., Ill., Dec. 15.

### Not a Good Season for Bees.

I met with a bad accident a little over a year ago. My horse ran away and I broke my hip at the joint. I can not walk a step without crutches. The surgeon tells me that I can walk pretty well in another year, but I am afraid he is mistaken, as it has been over a year since it was broken, and I can not step on it yet. I have to hire a man to take care of my bees. I put 50 colonies, apparently in good order, into the cellar Dec. 4.

The past was not a very good season for honey here, being too dry. I had about 1300 pounds of nice honey, which sold at 12 cents per pound.

I like the American Bee Journal very much, and don't want to do without it as long as I keep bees. W. L. MITCHELL.

Whiteside Co., Ill., Dec. 14.

### Bees Did Well.

My bees did well this year for this part of the country. I have about 110 colonies, and had a little over three tons of honey in one-pound sections. Two colonies produced a little over 200 pounds each. WM. M. DICK.

Ford Co., Ill., Dec. 14.

### First Summer With Bees.

This is my first summer with bees; I got plenty of stings, but no honey. I also had some experience with transferring and robbing.

I have three colonies of bees, the third being very late, and reared a good deal of brood in September and October. I thought they must be fed, so I made sugar syrup and fed it in a Boardman feeder, placing the feeder in the center of the entrance. This left space on both sides of the feeder, and it wasn't very long before the other two colonies were robbing the feeder, and the hive, too. Although

I contracted the hive-entrance so that only one bee could enter at a time, there was no fighting, and the hive was soon empty.

I fed again, and the robbery was repeated, so I piled hay in front of the hive and fed under this; but the bees crawled right into the hay. I then poured several pails of water over the hay, and the trouble ceased.

After this I fed $2.00 worth of sugar. The two colonies had their combs full. The third colony got rather slow about carrying it in, so I think they have enough for winter. I fed this sugar in the open.

I have received the Emerson binder, and must say that it is the best way to get the full worth of the Journal; easy to refer back and find articles which you need just now and don't quite remember. I have a full sheet of lined paper in the back of my binder, in which I keep a memorandum of articles that I will need later on. THEODORE FLUEGGE.

Dupage Co., Ill., Dec. 16.

## Honey-Locust.

I enclose some leaves and a blossom for naming. The bark is very smooth, and the tree has a fine foliage.

Frogs and toads can be found in creeks, springs, old wells, and in crab-holes near marshes. They sometimes freeze, which makes them blind, or partly so. A fish may be frozen as hard as a stick, but will swim after being in water awhile, but the eyes are damaged.

I am much pleased with the American Bee Journal. F. DURANT.

Winnebago Co., Wis., Dec. 12.

[The specimen sent for identification is the honey-locust—Gleditschia triacanthos—and belongs to the Leguminosæ family. Prof. Cook, in the Bee-Keepers' Guide, page 363, calls attention to the honey-locust as an excellent nectar-producing plant, along with others of the same family. These plants blossom early in the year, in May and June, and the bees produce a fair quality of honey from them.—C. L. WALTON.]

## Bees Flying—No Snow.

The ground is bare and no frost in it. The last few days the temperature has stood at 55 and 60 degrees, and my bees are flying. We have not had snow enough yet to track a cat. To be sure, all through November it was very cold. For the last two years we have not had snow enough to go sleighing.

HENRY M. BARTLETT.

Plymouth Co., Mass., Dec. 14.

## Enjoys Her Bees.

I enjoy the pictures of the apiaries, and will try to send one of my apiary. My bees are in good order, and well packed for winter. I have them on the summer stands with blankets over the brood-combs instead of the gum-cloth, and bags of open canvas filled with dry leaves on the blankets. I have never lost a colony from cold. My bees are a great pleasure to me. MRS. E. G. BRADFORD.

Newcastle Co., Dela., Dec. 10.

## Early Winter is Warm.

The weather is quite warm to-day, and bees are flying. If the winter continues this way there will be no loss of bees from freezing, that's positive, but when we have a warm, open winter we also have a poor season for honey the following summer. W. W. MCNEAL.

Scioto Co., Ohio, Dec. 13.

## Did Well With Bees.

I have done remarkably well with my bees this year, and am satisfied with the results of the season, 40 pounds to the colony being my average. I have sold all I had to spare right here in my home market for 15 cents per section. I do not produce any other kind of honey. When my customers buy the sections

direct from the hives, they know they are getting pure honey, and no mistake.

I would not be without the American Bee Journal for three times its cost. I always hail with delight its weekly visits, and generally read it through from beginning to end before I stop, and then re-read it in a day or two.

R. P. DAVIS.

Lamar Co., Tex., Dec. 9.

### Not a Glowing Report.

My report is not very glowing this season. From 32 colonies I got 750 pounds of section honey and 45 swarms, which makes 77 colonies to put into the bee-cellar. I am hoping for a better season next year. There was a great amount of bloom but no honey in it.

FRANK E. KNAPP.

Wadena Co., Minn., Nov. 31.

### A California Interview.

I saw a keeper of bees from the hills the other day who was much discouraged at the low price of honey. He can't afford to keep posted by taking a bee-paper. Don't be discouraged yet, fellow bee-keeper; wait for the New York bee-disease. "Why, what, what is that?" Black brood, of course, "Never heard of it." Why, it spreads faster than foul brood. Foul-brood germs are mostly carried in honey, wax, hive-parts, etc., while black-brood germs are supposed to go miles in the very nectar-yielding flowers.

"Holy smoke; if it ever gets out here in California it will ruin us. Raise the price of sage honey, sure pop." E. ARCHIBALD.

Los Angeles Co., Calif., Dec. 9.





## CONVENTION NOTICES.

**Minnesota.**—The Southern Minnesota Bee-Keepers' Association will hold its next annual convention in the County Commissioners' room at the Court House in Winona, Jan. 21 and 22. A good program has been arranged, and a large attendance is expected. All are invited.

E. B. HUFFMAN.

**Wisconsin.**—The Wisconsin State Bee-Keepers' Association will hold its annual convention in the State Capitol, at Madison, Feb. 5 and 6, 1902. This promises to be a large convention. All are invited to attend. There will be excursion rates of 1½ fare for the round-trip, good for all of the first week in February.

N. E. FRANCE, Pres. ADA L. PICKARD, Sec.

**California.**—The California State Bee-Keepers' Association will hold its annual convention in the Chamber of Commerce, Los Angeles, Jan. 15 and 16, 1002. We will try to have a good program. Come and exchange your bright ideas with your neighbors, and get some of the moss rubbed off your back, J. F. MCINTYRE, Sec.

G. S. STUBBLEFIELD, Pres.















# HONEY AND BEESWAX

**MARKET QUOTATIONS.**

CHICAGO, Dec. 21.—The honey market is of a slow nature with little change in price of any of the grades. Choice grades of white comb honey, 14½@15c; good to No. 1, 13½@14c; light ambers, 12½@13c; dark grades, including buckwheat, 10@12c. Extracted, white, 5½@7c; amber, 5¼@5¾c; dark, 5@5¼c; the scale of prices varying according to flavor, body and package. Beeswax steady at 28c. R. A. BURNETT & CO.

NEW YORK, Dec. 19.—Comb honey continues to be in good demand, and while the market is not overstocked, arrivals of white honey are sufficiently large to meet the demand, while buckwheat is rather scarce. We quote: Fancy white, 15c; No. 1, 14c; No. 2, 12@13c; and buckwheat, from 10@12c. Extracted remains dull and inactive with plenty of supply of all kinds. In order to move round lots, it is even necessary to shade the quotations, which are: White, 6@6½c; amber, 5½@6c; dark, 5@5½c; Southern, 55@60c gallon, according to quality. Beeswax firm at 28c. HILDRETH & SEGELKEN.

CINCINNATI, Dec. 20.—The honey market is rather dull on account of the warm weather. Extracted sells only to manufacturers from 5@6c; better grades alfalfa water-white from 6@7c; white clover from 8@9c. Fancy white comb honey sells from 13½@15½c.

C. H. W. WEBER.

ALBANY, N. Y., Dec. 20.—Honey in good demand now, as this is the most satisfactory time to sell. Grocerymen are stocking up and will buy lines, when late they only buy enough to piece out. Fancy white comb, 15@16c; mixed, 14@15c; buckwheat, 12@13c. Extracted, white, 6½@7½c; mixed, 6@6½c. H. R. WRIGHT.

OMAHA, Dec. 20.—New comb honey is arriving by express in small quantities from Iowa and Colorado, and selling at $3.50 per case in a retail way. California extracted honey is being offered carlots at 4½@4¾c per pound, f.o.b. California shipping-points, but we have not heard of any sales having been made thus far. The production of extracted honey seems to be quite large this year in Colorado, Utah and California. PEYCKE BROS.

BOSTON, Dec. 20.—The demand for honey is easing up, somewhat due in part to the holiday season at which time it is much neglected.

Our market at the present time runs 16c for strictly fancy in cartons; No. 1, 14@15c; No. 2, 12½@13c. Extracted, light amber, 7½@8½c; amber, 7c. BLAKE, SCOTT & LEE.

DES MOINES, Dec. 20.—There is very little doing here in new crop of honey. Some small lots of near-by produced comb honey are on the market and selling in a retail way at $3.50 to $3.75 per case. We do not look for much trade in this line before Sept. 1. Our market does not consume a great deal of extracted honey.

PEYCKE BROS. & CHANEY.

DETROIT, Dec. 20.—Fancy white comb honey, 14@15c; No. 1, 13@14c; no dark to quote. Extracted, white, 6@7c. Beeswax, 25@26c.

M. H. HUNT & SON.

SAN FRANCISCO, Dec. 18.—White comb, 11@12½ cents; amber, 8@10c; dark, 6@7 cents. Extracted, white, 5½@6c; light amber, 4½@5c; amber, 4@—.

The steamer American, sailing from this port on the 14th inst., for New York, carried as part cargo 726 cases honey, including 200 cases taken on at Seattle. Spot stocks are not heavy. Values are steady. The extreme southern part of the State has long been noted for its fine honey, but there is some extracted now on market from Monterey county which will compare favorably with the choicest honey ever produced in this or any other portion of the globe.

KANSAS CITY, Dec. 20.—Up to the present time only small lots of new comb honey have been on the market, and these met with ready sale on the basis of 15@16c per pound for fancy white. For next week heavier receipts are expected and quotations are issued at $3.10@$3.25 per case for large lots, which would be equal to about 14@14½c; the demand being quite brisk, a firm market is anticipated. Inquiries for extracted are a little more numerous, but large buyers still seem to have their ideas too low. In a small way 5½@6c is quotable.

PEYCKE BROS.

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